

# Pregnant women's responses to a tailored smoking cessation intervention: turning hopelessness into competence

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**Background:** Cognitive behavioral interventions consisting of brief counseling and the provision of self-help material designed for pregnancy have been documented as effective smoking cessation interventions for pregnant women. However, there is a need to understand how such interventions are perceived by the targeted group.

**Aim:** To understand the cognitive, emotional, and behavioral responses of pregnant women to a clinic-based smoking cessation intervention.

**Methods:** In-depth interviews with women attending four antenatal clinics in Cape Town, South Africa, who were exposed to a smoking intervention delivered by midwives and peer counselors. Women were purposively selected to represent a variation in smoking behavior. Thirteen women were interviewed at their first antenatal visit and 10 were followed up and reinterviewed later in their pregnancies. A content analysis approach was used, which resulted in categories and themes describing women's experiences, thoughts, and feelings about the intervention.

**Results:** Five women quit, five had cut down, and three could not be traced for follow-up. All informants perceived the intervention positively. Four main themes captured the intervention's role in influencing women's smoking behavior. The process started with 'understanding their reality,' which led to 'embracing change' and 'deciding to hold nothing back,' which created a basis for 'turning hopelessness into a feeling of competence.'

**Conclusion:** The intervention succeeded in shifting women from feeling pessimistic about ever quitting to feeling encouraged to try and quit. Informants rated the social support they received very highly and expressed the need for the intervention to become a routine component of clinic services.

Keywords: *pregnancy; smoking cessation intervention*

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Maternal smoking during pregnancy is a major public health challenge in many countries, including South Africa. It is well established that smoking in pregnancy has many negative outcomes for both the mother and baby such as placenta previa, abruption placenta, preterm delivery, and low birth weight (1, 2). Although many mothers are aware of the potential harm caused by smoking, they continue to smoke throughout their pregnancies. Determinants of continued smoking include low socioeconomic status,

lack of partner support, intimate partner violence, and a lack of emotional support (3).

In South Africa, less than 10% of women of European, Indian, and African descent smoke (4). However, an alarming 46% of women of mixed ancestral descent smoke and continue to smoke throughout pregnancy (5). The latter study showed that most women are aware that smoking is harmful, but do not understand the potential severity of the harm. The same study indicated that specific subgroups of women of mixed ancestral

descent are particularly at risk of smoking during pregnancy and these include women with low educational levels, who are alcohol drinkers, who have not planned their pregnancies, and those not supported by a partner. Qualitative research in the same population has highlighted the negative response of women to the authoritarian approach to counseling adopted by midwives and the implications this has for openness and trust in the relationship between women and antenatal care providers (6).

These findings led to the development of a smoking cessation intervention aimed at disadvantaged women of mixed descent. The intervention was introduced in four public sector antenatal clinics in Cape Town (7). Midwives and peer counselors were trained to deliver the 5 As best practice guideline (8) for brief smoking cessation counseling using a client-centered approach. This approach entails providing counseling and self-help educational materials specifically developed for pregnant women (9). The main obstacles to using Motivational Interviewing (MI) in previous intervention studies have been the amount of time it takes to deliver such an intervention (8) and that the 5 A's guideline (Asking about smoking, Advising to quit, Assessing willingness to quit, Assisting in quitting, and Arranging for referral or follow-up contact) may not be as effective with women who smoke heavily during pregnancy (9). While tailored interventions have shown to increase willingness to actively participate (10), it remains to be seen whether these techniques, coupled with the counseling from a trained midwife and peer counselor, would overcome the obstacles to cessation reported by previous studies.

The objective of this qualitative part of the evaluation was to explore how pregnant women experienced and perceived being part of the intervention and to understand its influence on smoking behavior change. A quantitative evaluation of the study was also conducted and outcome of the intervention in terms of impact on quit rates is reported elsewhere (7).

## Methods

### Study design

The study was based on a qualitative research design, using in-depth interviews with pregnant women. Individual interviews were regarded as most suitable for capturing their personal responses to the intervention over time and to allow them to reflect on their experience of the intervention in a follow-up interview.

### Sampling of informants

Pregnant women were recruited from the four public sector antenatal clinics situated in Cape Town, where the intervention had been implemented. The informants were approached during their first antenatal visit after they

had been referred to a peer counselor. A purposive maximum variation sampling method was used to achieve variation in terms of age, number of pregnancies, and smoking habits. Following an emergent design, data collection was restricted to doing three interviews per week, allowing time for reflection and preliminary analysis to guide the continued sampling process. After having performed interviews with a total of 13 women in connection with their first antenatal visit, we felt that we had captured the range and variation in experiences in this group and that saturation was reached. Ten of these women were interviewed for a second time toward the end of their pregnancies or shortly after they had given birth.

The Committee for Human Research at Stellenbosch University granted ethical approval for the study and access to the clinics was gained through consultation with the health department, clinic managers, and midwives. All participating women were informed about the study by the peer counselors and after having expressed their willingness to participate, they were contacted by the researcher who explained the nature and purpose of the interviews in more detail.

### Data collection

All interviews were conducted by the first author who is trained in qualitative methodology. The initial interviews were conducted at the clinic, while the follow-up interviews were conducted at a place chosen by the informants as the most comfortable or convenient, in this study either their home or their workplace. The duration of the tape-recorded interviews was no longer than 2 h. During the initial interview, the focus was on understanding the informants' views on smoking, their perceptions of smoking in the community, their thoughts about the intervention, and their willingness to adopt it. The follow-up interviews examined the influence of the intervention over time. Women were asked to reflect on:

- 1) The importance of the intervention
- 2) The impact of the intervention on daily life
- 3) Their emotional response to the intervention
- 4) Changes in their experiences, perceptions of smoking, and their smoking behavior

### Data analysis

Data were analyzed using a content analysis approach aiming at a theoretical understanding of the manifest and latent meaning of pregnant women's response to a smoking cessation intervention (11). Each interview was transcribed verbatim by the interviewer herself in order to secure the details relevant to the interview and the analysis, such as the excitement women expressed about the intervention and their feelings about antenatal care (12). Interviews were later translated to English to

facilitate a joint analysis within the research group. The first step was to read each interview in detail, followed by analyzing the text line by line in search of meaning units, at the same time starting with an open coding process to understand the meaning of the text using the Open-Code software (13). In the next step, codes from all the interviews were compared to develop categories to capture the manifest meaning. The final step was to develop themes that provided understanding of the more latent meaning, thus giving an account of how women's thoughts and feelings about the intervention affected the way in which they responded to it. In Fig. 1 the analytical process moving from meaning units via codes to a category is illustrated.

## Findings

The analysis was based on the interviews performed with 13 women at the beginning of the intervention and follow-up interviews with 10 of these women. Table 1 gives an overview of the main socio-demographic characteristics of all informants.

The analysis resulted in four main themes that constructed an understanding of the role of the intervention from the informant's perspectives. *Questioning their reality* refers to the informants' reflections on their own smoking, why they started smoking, and how smoking is viewed in the community. This theme describes women's thoughts and perceptions right at the beginning of the intervention and when they were first interviewed. It describes their new found understanding of the dynamics of smoking in their community and their choice in conforming to the norm. *Embracing change* relates to the realization that behavior change is not only possible but within reach and it captures their willingness to consider quitting. While some women started embracing this change immediately after their first intervention contact and mentioned it during the first interview, others experienced it as a process where their thinking was influenced each time they were exposed to the intervention. *Deciding to hold nothing back* illustrates the encouragement and increased trust that women felt after being exposed to different components of the intervention. The more contact women had with the peer counselors and

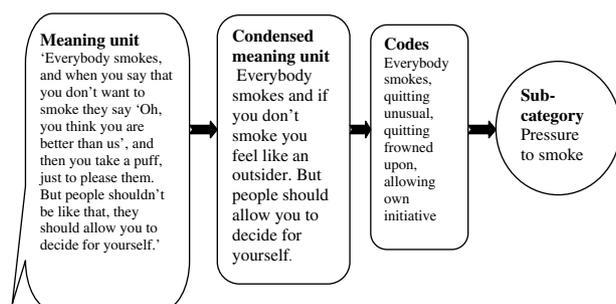


Fig. 1. The coding process, moving from a meaning unit to a subcategory.

Table 1. Characteristics of women at the time of first interview ( $n = 13$ )

Characteristics	Number of women
<b>Age</b>	
16–20	6
21–30	5
31–40	2
<b>Marital/relationship status</b>	
Married	4
Unmarried but living with partner	3
In a relationship but not living together	4
Not in a relationship with father of baby	2
<b>Housing</b>	
Living alone with partner and children	4
Living with parents	6
Living with friends/non-relative	3
<b>Education</b>	
Not completed primary school (7 years)	2
Some high school education	7
Completed high school (12 years)	4
<b>Employment</b>	
Permanently employed	6
Part-time employed	3
Unemployed	4
<b>Tobacco use</b>	
First interview 1–5 cigarettes a day	6
5–10 cigarettes a day	2
More than 10	3
More than 20	2
Second Interview: <sup>a</sup> Quitters	5
1–5 cigarettes a day	4
5–10 cigarettes a day	1
<b>Alcohol use</b>	
Ever drinkers	12
Currently drinking	4
Quit before pregnancy	4
Quit during pregnancy	4
<b>Drug use</b>	
Ever users	8
Current users	3
Quit before pregnancy	2
Quit during pregnancy	3
<b>Passive smoking</b>	
Living with smokers	10
Working with smokers	9 (employed)

<sup>a</sup> $n = 10$ .

the midwives, the more in tune with their own reality they became. While all women felt positive about their interaction with the peer counselor when first interviewed, most women reported to have more open communication with the midwives by the time they were interviewed a second time. *Turning hopelessness into feeling competent* illustrates how women reflected on being provided with tools to either quit or decrease their smoking. This theme was mostly derived from women’s reflections of the intervention during their second interview. Fig. 2 gives an overview of the findings illustrating the relationship between the research focus, categories, subcategories, and themes. The findings will be presented by structuring the themes as headings, with categories (bolded), subcategories (in italics), and quotations from interviews to illustrate how the analysis is grounded in the data.

### Questioning their reality

During the initial interviews, the informants described their community as being one of heavy smokers with **smoking as the norm**.

I didn’t really have any reason to smoke, people were always smoking around me and when I sat in a company everybody smoked, then it seemed like the logical thing to do, and I felt it was OK to smoke.  
Interviewee 2

They also gave a picture of a community faced with high rates of crime and drug and alcohol abuse. Of all the substances available in this community, such as methamphetamine and marijuana, they believed that smoking was the least harmful and therefore acceptable. With high levels of stress caused by a troubled society, young people

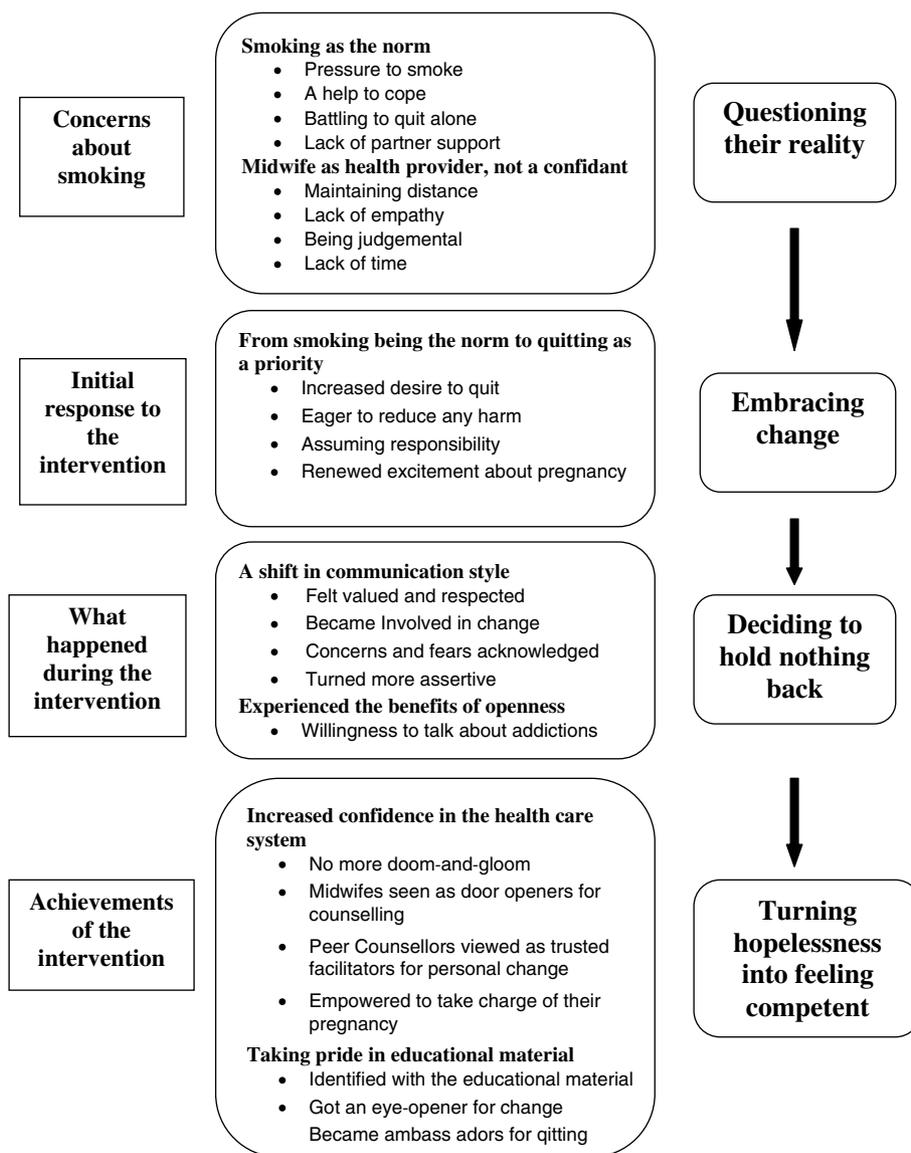


Fig. 2. The research questions, categories and subcategories, and the corresponding themes illustrating the transition that the women experienced during the intervention.

especially felt *pressured to smoke* firstly to fit in, but also because of a belief that a substance like smoking would *help to cope* with a difficult situation and avoid worse addictions.

I would never use meth and I've never even wanted to, so that is why I smoke ... at least I have something to help calm my nerves when I have a problem. You know what it feels like when you are so mad you could scream, but instead you take a cigarette and just try to smoke away the tension. Interviewee 6

When asked about their reasons for smoking, they all responded that smoking had been a normal part of growing up and they thought that very little could be done to change the mindset of people on a community level. They felt that since people in their surrounding did not understand the risks associated with smoking, they did not understand the possible benefits of quitting either. Women thus expressed *battling to quit alone* in their previous attempts, and a *lack of partner/family support* with no one positively encouraging them to quit or quitting themselves. In this community, unless a person already had a life threatening illness or became pregnant, quitting was frowned upon.

I wanted to quit a long time ago, but then my family would intentionally smoke in my company. Now that I am pregnant everybody, especially my husband, is telling me to quit for the sake of the baby, but they don't care about the baby because they smoke in my company. Interviewee 12

During the initial interviews, the midwives were referred to as a **health provider not a confidant** with a mode of communication that made the pregnant woman's keeping quiet and not asking questions, thereby *maintaining* the distance between the two.

That is how it is has always been, the midwife has the only say. I won't say that they have ever been rude to me; they just don't think that they need to ask me what I think. And, to be honest, I prefer it that way ... they are the last people I would talk to about my problems. Interviewee 2

Women reported that they choose not to speak to the midwife about personal issues because of the *lack of empathy* shown and fear of the midwife *being judgmental* and not understanding what they were going through.

You wait so long for the nurse, but once you are inside all you want is to get out of there as soon as possible. I think it's just the way they look at you that already makes you feel guilty about smoking. And why explain to them if they won't understand? Interviewee 11

Over the years, women seemed to have accepted this one-way relationship between them and midwives (where only

midwives speak) because it was what they expected and it also protected them from talking about their habits.

However, the theme (questioning their reality) emphasizes that already early in the intervention, women started to question their own as well as the community's reasons for smoking.

I didn't see any reason for me to be smoking, there is absolutely nothing I achieve each time I smoke. And then I received the smoking counseling at the clinic, and that convinced me that there is no need for me to smoke. Interviewee 4

One of the most important revelations for women during the intervention was how their life situation affected their judgment about smoking, drinking, drug use, and violent relationships. Women realized that the community in which they lived had become so accustomed to these problems that they become indifferent to it.

People here don't think anything of smoking or meth. It is so common and everyone does it. As long as you don't bother anyone its fine. And they probably do all those things to get away from their messed-up lives; it's like a way of coping if you are not happy with the way your life is going. Interviewee 4

Even if a somber picture was painted by the pregnant women about their relationship with midwives, they all seemed to have reflected that it could have been positively different if the midwife had changed their way of communicating and had more time to spend with them.

### Embracing change

During the first round of interviews, it was evident that women felt that their concerns were ignored by the midwives; later in their pregnancies they increasingly felt seen and valued. The intervention and the presence of the peer counselors, in a sense, validated the transformation women went through during their pregnancies, from being passive recipients of antenatal care to feeling more empowered and in control of their own lives. Women understood and accepted the need for dealing with their smoking and other addictions and they, consequently, welcomed the help offered by the peer counselors.

The most significant change for informants was the fact that previously they felt 'forced,' whereas they now felt an *increased desire to quit*. Women felt that their opinions had been taken into account in all the components of the intervention: they were encouraged to talk and were sympathetically listened to by the peer counselors, their background and needs were taken into consideration in the design of the educational material, and they had a choice regarding the involvement of the midwives in the intervention.

Sometimes I don't even have a clinic appointment to see the peer counselor but I still come to the clinic. She has no idea how much she is helping and

I would go out of my way to speak to her, it's worth it because she has helped me see the other side of things. Interviewee 7

Women embraced the possibility of changing other risky behaviors too, such as alcohol and drug use and reported that, for the first time, they were given the tools to change. This made them more *eager to reduce any harm* their actions might cause their babies. They appreciated the fact that there was someone available they could see any day of the week, and that they could talk about whatever troubled them and not only about concerns regarding their pregnancy. For many of the informants who abused drugs, mostly methamphetamine, the fact that they succeeded in quitting methamphetamine was an indication of the effectiveness of the intervention.

I drank a lot at the beginning of my pregnancy and I used meth now and then. My husband doesn't smoke or do meth but he smokes marijuana. I no longer drink or use meth. I'm not sure whether I will be able to quit completely but I smoke much less. Interviewee 13

I was on meth on a daily basis... I didn't think that I could stop, and I didn't really want to. I was worried about it, but still did it. But then I came here and I realized what it could do and that scared me ... so I think I would be able to stop smoking too. Interviewee 6

Women acknowledged that 'change' would only come about if they embraced the intervention full-heartedly by *assuming responsibility* for their own behavior change. The extent to which they embraced the intervention was evident in their *renewed excitement about their pregnancies*, their commitment and eagerness to see the peer counselor, and the way in which they treasured the educational material.

### Deciding to holding nothing back

From our analysis it became clear that during the course of the intervention, women's communication about their tobacco use and the use of other addictive substances changed in response to what they perceived as a **shift in communication style**.

Women expressed an appreciation of the peer counselors who strongly encouraged them to express their feelings and views making them *feel valued and respected*.

I felt like I could talk to her and for the first time I didn't want to hide anything. Whenever I'm sitting in the waiting room with a problem on my mind she comes to me and says 'would you like to speak about it.' I think she can see right through us because we have so much in common. Interviewee 5

Two informants confided that they had tried to avoid the peer counselor after their first consultation but later they had realized that this relationship was different, in that

the peer counselors were committed to engaging with them. This gave the women a sense that the peer counselors valued them, which encouraged them to open up. During the first meeting with the peer counselors, women seemed to have realized that in order for the peer counselor to help them they needed to be emotionally *involved in change*.

It makes you feel important to see that someone who has no connection to you goes out of their way to help you. ... It encourages you to change your lifestyle even if you hadn't thought about it before. And knowing that she is there to help you, to listen to your stories and advise you on what to do, that helps a lot. Interviewee 9

When they reached this realization, it was evident that there were very few topics that could not be raised in their sessions with the peer counselors. They felt respected and were convinced that the peer counselors really *acknowledged their fears and concerns* and, thus, willingly participated in the intervention. This allowed for deep and meaningful interaction with the peer counselor.

We often talk about things I wouldn't talk to some of my friends, because I know that what I tell her stays between us. And whatever I tell her I never get the feeling that she judges me for it, and she never tells me what to do, she listens and tells me to think about it and do what's best. Interviewee 12

Even though many of the informants said that they tended not to speak to the midwife, they reported that they had *turned more assertive* and no longer felt scared to ask the midwife questions. Though these questions were more related to their pregnancy and had very little to do with smoking or other addictions, they purposefully posed their questions because they were aware of their right to ask for advice.

Having the peer counselor to talk to has made me less scared to ask questions, even of the nurses. Now I find myself asking the nurses questions without thinking twice and the funny thing is that I always get an answer, so maybe they have also changed. Maybe having the counselor here has helped them, they seem more approachable. Interviewee 12

During the intervention the approach of the peer counselor during consultations also made the women **experience the benefits of openness**, be it with the midwife or the peer counselor. As shown in the above quotations, the women became *more willing to talk about their addictions by being allowed to be themselves*. This facilitated the relationship with both the counselor and the midwives, which in turn facilitated a change in smoking habits.

### Turning hopelessness into feeling competent

Most of the women interviewed had been smoking since a very young age and most of them had never tried to stop. They thought that they were doomed to smoke for the rest of their lives. It was clear from the interviews that the intervention helped women come to the realization of how hopelessness as a negative emotion acts as a barrier to behavior change. Overall, the intervention seems to have **increased the confidence in the health care system**. In the initial interviews, informants expressed a lack of faith in their ability to quit and reported having failed previous quit attempts. For some women, quitting remained difficult even after they were exposed to the intervention, but they reported that their interaction with the peer counselor gave them hope that they might succeed in the future, *reducing* their feelings of *doom and gloom*.

Everything about me has changed. I think I have grown up a lot over the past few months and it had a lot to do with the smoking program and with the talks I had with the counselor. I now question everything I do and ask myself 'is that good or bad for my baby.' I never felt like that before. Interviewee 8

I really want to quit smoking. It has just been so hard, and the fact that I have been working and that I haven't been able to see Beverley more often didn't make it easier. I now only smoke two to three cigarettes a day but I still want to quit completely. Interviewee 3

While most women preferred to speak to the peer counselor about smoking, they all reported the midwife's important role *as a door opener* for these meetings, thereby ensuring that the counseling they needed from the *peer counselors for facilitating personal changes*.

All the women interviewed reported that they experienced a renewed excitement about their pregnancies and they saw this as a result of the intervention. They felt that the intervention had increased their faith in the health system and in their own ability to change.

From the interviews, it became evident that the informants felt they had been given valuable tools to change their smoking, which could also be applied to deal with other addictions. They **took pride in the educational material** and talked about how they *identified with the pictures and testimonials* that portrayed people like themselves. This had been an *eye opener* for them making them feel recognized, confirmed, and worthy of help.

I liked the story on the cover, the girl looks familiar. When I read it I thought this could have been me and this could have happened to my baby. I felt so sorry for her and decided that I should change my lifestyle. Interviewee 7

Everybody wanted to see the Quit Guide and everybody claimed to know someone in the book. I thought that it was a good idea to use people from our community because you think that if they could

quit then you could do the same. I think the book and the newspaper gives people like us hope . . . that. Interviewee 11

The intervention seems to have made room for cognitive restructuring, which in turn allowed women to replace their feelings of hopelessness with hope and ambition. Instead of being convinced that quitting was difficult and unattainable, they started to believe that quitting was possible. Even those women who still battled to quit, realized that instead of searching for a quick fix to quitting, they needed to plan their everyday activities, check their progress, and question their reasons for smoking. Some even *became ambassadors for others to quit*. This in turn created a sense of competence about making a change.

Even my husband must watch out now, because if I can quit for the health of my family, then he should do the same. I tell him every day that he should start thinking about quitting. He reads the book but I don't think he takes it in but I believe that he should quit. Interviewee 2

### Trustworthiness

Various steps were taken to ensure that the themes developed from the data truly described the experiences of the informants (11). Prolonged engagement with the participants was attempted by keeping contact with women throughout their pregnancies and formally interviewing them for a second time, some months after the first interview. Peer debriefing, involved consulting with other members of the research team on a weekly basis. This allowed for an outsider perspective on the preliminary findings. Triangulation of researchers in the analysis meant that two researchers analyzed the same transcripts to compare and negotiate about the categories developed. To stay as close to the text as possible, most of the interviews were coded in their original Afrikaans text but categories and themes were developed in English.

### Discussion

This study illustrates how a client-centered intervention using best practice guidelines for smoking cessation (14) was perceived by the participating women. The quantitative part of the evaluation indicated that significantly more of the pregnant women that were exposed to the intervention quit, with a difference in quit rates of 5.3% among women who had been exposed to the intervention and women who had not received any form of intervention (95% CI: 3.2–7.4%,  $p < 0.0001$ ). A significant difference in the reduction of smoking was also found in women exposed to the intervention and those who were not (95% CI: 5.0–18.4%,  $p = 0.0006$ ) (7). The qualitative analysis shows the role the intervention played in getting women to a stage where they start questioning the normative smoking behavior prevailing in their community, how it enabled

them to embrace the possibility of changing their smoking behavior, as well as their increased trust in the health care system. The core finding of this study is the transformation women experienced from feeling a sense of hopelessness about quitting to feeling competent to change their behavior.

As found in a previous study, this transformation was made possible by the client-centered approach adopted by midwives and peer counselors (15). Women experience a sense of competence when they feel that their opinions are considered in deciding on a plan of action for behavior change. It has also been argued that the approach used in antenatal care should move away from advice giving to the creation of dialogue (16). This increases women's self-efficacy in dealing with their problem, it creates and awareness by reflecting on their own meaning of the smoking issue, and it allows women to freely talk about their habit. Midwives or peer counselors also need to take a woman-centered rather than a baby-centered approach as the latter approach gives pregnant smokers the feeling that they are not worthy of good care as they are the perpetrators in harming their babies (17). Other researchers have indicated difficulties in implementing cessation programs consisting only of midwives' advice as a part of routine antenatal care (18). Women often view cessation services provided by health professionals negatively (19) and more qualitative research on the relationship between midwives and pregnant women and its effect on smoking behavior needs to be done (17). For this reason, involving an alternative such as peer counselors was clearly justifiable.

The women who received the client-centered quitting intervention program in this study were very positive about the intervention. This highlights the role of health care providers in enhancing self-efficacy to increase motivation to change (20).

Several women in this study reported using tobacco, alcohol, and drugs and many of the women's partners were substance abusers. For these women, the prospect of having to quit more than one substance was clearly a stressor. Helping pregnant women deal with stress has been found to be a crucial element in dealing with their addictions (21). This is in line with another study that reported that social support components are more effective than traditional prenatal counseling in dealing with addictions (22). Our study showed that offering pregnant women social support in the form of a peer counselor was highly valued as it prepared and enabled women to deal with their addictions.

The theme 'turning hopelessness into feeling competent' clearly illustrates the shortcoming of traditional prenatal counseling. Previous research in this community had shown the extent to which women felt 'unworthy' as a result of lack of communication and interaction with midwives (6). Smoking cessation interventions need to be

implemented in all maternity care settings as it has been proven in several studies to reduce the proportion of women who continue to smoke in pregnancy, and it reduces low birth weight and preterm birth (23).

## Conclusion

This study shows that a multifaceted smoking intervention program provided for pregnant women of a disadvantaged background with high smoking rates can make a difference. By providing educational material and social support channeled through the antenatal services, women may start questioning the normative smoking and start to feel competent to change their smoking behavior. The additional benefit of being 'seen' and 'heard' also has the potential of influencing other types of drug abuse. The principles of this intervention should be introduced as routine components of antenatal care in South Africa, but there is still a need to evaluate the contribution of the different components of the intervention package, which will be discussed in a forthcoming paper.

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